

Application No.: 10/723,025
Amendment dated: June 23, 2005
Reply to Office Action of: June 6, 2005

REMARKS/ARGUMENTS

Examiner had identified 17 species of the claimed invention:

Species I, drawn to Figures 1 through 4;
Species II, drawn to Figure 5;
Species III, drawn to Figures 6 though 11;
Species IV, drawn to Figures 12 and 13;
Species V, drawn to Figures 14 through 16;
Species VI, drawn to Figure 17;
Species VII, drawn to Figures 18 and 19;
Species VIII, drawn to Figure 20;
Species IX, drawn to Figures 21 and 22;
Species X, drawn to Figure 23;
Species XI, drawn to Figures 24 and 25;
Species XII, drawn to Figures 26, 27, and 29;
Species XIII, drawn to Figure 28;
Species XIV, drawn to Figures 30 through 32;
Species XV, drawn to Figure 33;
Species XVI, drawn to Figure 34; and
Species XVII, drawn to Figures 35 and 36.

Applicant provisionally elects Species I, drawn to Figures 1 through 4 with traverse.

Claims 1 through 5 are readable thereon.

Applicant's invention is a sliding piston opening means. The sliding piston opening means comprises a length of tube with one or more openings through part of its length. A sliding piston with a sealing diameter approximately that of the inside diameter of the length of tube is disposed within the length of tube and is movable from a first closed position to a second open position. The opening means is affixed inside a compressible elongated tubular housing with a sealed end and an open end and with approximately the same inside diameter as the outside diameter of the length of tube. A fluid is enclosed within the compressible elongated tubular housing near the sealed end separated from the open end of the compressible elongated tubular housing by the opening means thereby sealing the fluid within the compressible elongated tubular housing. The opening means may also be made as a part of the compressible elongated tubular housing such as in the form of a section with reduced inside diameter. The opening mean is operated by squeezing the compressible elongated tubular housing at or near the sliding piston to open and close a fluid path from the fluid to the open end of the compressible elongated tubular housing.

Figure 1 shows a cross-sectional view of the preferred embodiment of the sliding piston opening means in the closed position. Figure 2 shows a cross-sectional view of the same embodiment of the sliding piston opening means as in figure 1 but in the opened position. Figure 3 shows an enlarged view of the sliding piston opening means shown in figure 1. Figure 4 shows an enlarged cross-sectional view of the sliding piston opening means shown in figure 2. Claims 1 through 5 are readable thereon.

Figure 5 shows an alternate embodiment of the sliding piston opening means shown in figures 1 through 4. In this embodiment, an additional slit opening is provided on the opposite

end of the length of tube. This embodiment enables the piston to be moved in either direction to open the sliding piston opening means. The only difference between this embodiment and the embodiment shown in figures 1 through 4 is the addition of a second slit opening at the opposite end of the length of tube. This alternate embodiment embodies the same invention and functions in the same way as the preferred embodiment shown in figures 1 through 4. Claims 1 through 5 are readable thereon.

Figure 12 shows a cross-sectional view of yet another embodiment of the sliding piston opening means in the closed position, similar to figure 1. Figure 13 shows a cross-sectional view of the same embodiment of the sliding piston opening means shown in figure 12 but in the opened position, similar to figure 2. In this embodiment an applicator tip 17 is affixed to one end of the sliding piston. The only difference between this embodiment and the embodiment shown in figures 1 through 4 is the addition of an applicator tip 17 at one end of the sliding piston. This alternate embodiment embodies the same invention and functions in the same way as the preferred embodiment shown in figures 1 through 4. Claims 16 through 18 are readable thereon.

Figures 14 and 15 show cross-sectional views of yet another embodiment of the sliding piston opening means. Figure 16 shows an enlarged view of the sliding piston opening means shown in figures 14 and 15. In this embodiment, the length of tube is separated into two short sections of tube with the slit opening provided at one short section of tube. This is essentially the same structure as the structure shown in figures 1 through 4, with the only exception being that the length of tube is formed as two separate short sections of tube. This embodiment embodies the same invention and functions in the same way as the preferred embodiment shown in figures 1 through 4. Claims 9 through 11 are readable thereon.

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Figures 17 and 18 show an enlarged cross-sectional view of two other embodiments of the sliding piston opening means. In the embodiment shown in figure 17, the sliding piston has two ends that are generally in an elliptical shape and has a sealing diameter between the two ends that is approximately that of the inside diameter of the length of tube disposed with the sealing diameter inside the length of tube. In the embodiment shown in figure 18, the sliding piston has one end that is generally in an elliptical shape and has a sealing diameter at the other end that is approximately that of the inside diameter of the length of tube disposed with the sealing diameter inside the length of tube. The only difference between the structures shown in figures 17 and 18 and the structure shown in figures 1 through 4 is the shape of the sliding piston. The sliding pistons shown in figures 17 and 18 are essentially elongated version of the sliding piston shown in figures 1 through 4. These sliding pistons embody the same invention and functions in the same way as the preferred embodiment shown in figures 1 through 4.

Figures 19 and 20 are simply two different applications of the sliding piston opening means using the same embodiment of the sliding piston shown in figure 18. The application shown in figure 19 uses one of the sliding piston shown in figure 18 while the application shown in figure 20 uses two of the sliding pistons shown in figure 18. Claims 19 and 23 through 26 are readable thereon.

Figure 23 shows another variation of the embodiment of the sliding piston opening means shown in figures 1 through 4. In this embodiment, the length of tube itself is the compressible elongated tubular housing. Essentially, this embodiment is the structure shown in figure 3 with one end of the length of tube sealed to enclose the fluid between the sealed end and the sliding

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piston. An applicator may be affixed to the open end of the length of tube similar to the structure shown in figures 1 and 2. Claims 27 through 30 are readable thereon.

Figures 24 and 25 show two similar applications of the embodiment of the sliding piston opening means shown in figure 23. In figure 24, the structure shown in figure 23 is placed within a second elongated tubular housing 48 with a sealed end and an open end. An applicator may be affixed to the open end of this second elongated tubular housing. In figure 25, the structure shown in figure 23 is placed within a second elongated tubular housing 53 with a sealed end and an open end that has a reduced diameter. An applicator may be affixed to the reduced diameter open end of this second elongated tubular housing. Claims 31 through 34 are readable thereon.

Figures 33 through 36 show another variation of the sliding piston opening means previously shown in figures 1 through 4. In these embodiments, the one or more openings are in the form of a hole in the wall of the length of tube instead of a slit opening through the wall of the length of tube. Otherwise, these embodiments are essentially the same as the preferred embodiment shown in figures 1 through 4. These sliding pistons embody the same invention and functions in the same way as the preferred embodiment shown in figures 1 through 4. Claims 51 through 62 are readable thereon.

Applicant respectfully requests that the restriction requirement be reconsidered and withdrawn and a timely Notice of Allowance be issued in this case.

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Respectfully submitted,



Joe Nieh
Registration Number: 46,961
18760 E. Amar Road, #204
Walnut, CA 91789
Tel: (626) 964-4227
Fax: (626) 854-5717
E-Mail: nieh@justice.com

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Joe Nieh
Registration Number: 46,961
18760 E. Amar Road, #204
Walnut, CA 91789
Tel: (626) 964-4227
Fax: (626) 854-5717
E-Mail: nieh@justice.com